

WHAT IS CLAIMED IS:

Sub 27 1. An intravascular stent including a longitudinal axis and a plurality of connected cylindrical rings, each ring having a plurality of crests, comprising:
a plurality of generally linear bar arms connected in-between a plurality of nonlinear bar arms so that adjacent linear and nonlinear bar arms define the crests.

2. The stent of claim 1, wherein the plurality of nonlinear bar arms include a plurality of primary nonlinear bar arms and a plurality of secondary nonlinear bar arms.

3. The stent of claim 2, wherein the primary nonlinear bar arms are generally sinusoidal.

4. The stent of claim 2, wherein the secondary nonlinear bar arms have an undulating member.

5. The stent of claim 2, wherein each ring comprises a plurality of ring portions shaped like figure-eights.

6. The stent of claim 5, wherein the ring portions alternate between a first figure-eight portion and a second figure-eight portion, with the first figure-eight portion defined by a proximal portion of the primary nonlinear bar arm, the linear bar arm, and a distal portion of the secondary nonlinear bar arm; and the second figure-eight portion being adjacent to the first figure-eight portion, defined by a proximal portion of the

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

13. An endovascular prosthesis having a plurality of rings, comprising:

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linear bar arms connected in-between primary non-linear bar arms and secondary non-linear bar arms such that the adjacent linear and the primary nonlinear bar arms, and the adjacent linear and the secondary nonlinear bar arms define crests
5 within the plurality of rings;
ring portions shaped like a figure-eight; and
connecting links that connect the plurality of rings in a staggered configuration.

14. The endovascular prosthesis of claim 13, wherein the primary nonlinear bar arms and the secondary nonlinear bar arms are undulating.

15. The endovascular prosthesis of claim 14, wherein the primary nonlinear bar arms are sinusoidal.

16. The endovascular prosthesis of claim 13, wherein the ring portions alternate between a first figure-eight portion and a second figure-eight portion, with the first figure-eight portion defined by a proximal portion of the primary nonlinear bar arm, the linear bar arm, and a distal portion of the secondary nonlinear bar arm; and the
5 second figure-eight portion being adjacent to the first figure-eight portion defined by a proximal portion of the secondary nonlinear bar arm, the linear bar arm, and a distal portion of the primary nonlinear bar arm.

17. The endovascular prosthesis of claim 13, wherein the primary nonlinear bar arms and the secondary nonlinear bar arms have a first and second axis respectively.

18. The endovascular prosthesis of claim 17, wherein the first and second axes are parallel.

19. The endovascular prosthesis of claim 13, wherein a first ring is connected to a second ring by the connecting links having a proximal end extending from distal crests formed by the secondary non-linear bar arms of the first ring, to proximal crests formed by the primary nonlinear bar arms of the second ring; and the second ring is
5 connected to a third ring by the connecting links joined at distal crests formed by the primary nonlinear bar arms of the second ring, to proximal crests of the secondary nonlinear bar arms of the third ring; whereby the staggered configuration is repeated.

20. The endovascular prosthesis of claim 19, wherein the connecting links are straight.

21. The endovascular prosthesis of claim 19, wherein the connecting links are nonlinear.

22. A method for inserting an intravascular stent into a vascular lumen, the intravascular stent including a plurality of connected cylindrical rings, the cylindrical rings having ring portions shaped like a figure-eight, the figure-eight-shaped ring portions being defined by a linear bar arm positioned in-between non-linear bar arms,
5 the method comprising:

mounting the intravascular stent onto a catheter in an unexpanded configuration;

advancing the catheter in the vasculature to position the unexpanded intravascular stent in a desired location in the vascular lumen;

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expanding the cylindrical rings of the intravascular stent radially outward;
implanting the intravascular stent in the vascular lumen; and
withdrawing the catheter from the vascular lumen.

23. The method of claim 22, wherein the catheter has an expandable member,
and the intravascular stent is mounted thereon.

24. A method for forming a stent, the stent having a pattern comprising a
plurality of connected cylindrical rings, each ring having a plurality of crests and ring
portions shaped like figure-eights, the crests and figure-eight portions being defined by
a plurality of generally linear bar arms disposed in-between a first non-linear bar arm
5 and a second non-linear bar arm, the method comprising laser cutting the stent pattern
in a tube.

25. The method of claim 24, wherein the tube is made of a biocompatible
material.

26. The method of claim 24, wherein the tube is made of stainless steel.

27. A method for forming a stent, the stent having a pattern comprising a
plurality of connected cylindrical rings, each ring having a plurality of crests and ring
portions shaped like figure-eights, the crests and figure-eight portions being defined by
a plurality of generally linear bar arms disposed in-between a first non-linear bar arm
5 and a second non-linear bar arm, the method comprising:
laser cutting the stent pattern in a flat metal sheet;

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rolling the cut metal sheet into a tube; and
providing a longitudinal weld along the tube to form the stent.

28. The method of claim 27, wherein the flat metal sheet is made of a biocompatible material.

29. The method of claim 27, wherein the flat metal sheet is made of stainless steel.

Sub 27 30. An intravascular stent, comprising:
a plurality of connected rings each having a plurality of crests;
at least some of the rings having figure-eight-shaped ring portions; and
means for forming at least some of the crests.

31. The stent of claim 30, wherein the crest forming means includes linear bar arms connected in-between non-linear bar arms so that adjacent linear and non-linear bar arms define the crests.